

CLAIMS:

1. A semiconductor laser module having a semiconductor laser element, a submount bonded to this semiconductor laser element with a solder layer in-between and thereby mounted with it, and a base mounted with this submount with another solder layer in-between, wherein:

$T/W \geq 0.15$ holds, where W is a width of said submount in a direction orthogonal to an optical axis of said semiconductor laser element and T is a thickness of said submount.

2. A semiconductor laser module as claimed in Claim 1, wherein:

the main constituent material of said semiconductor laser element is indium-phosphorus, the member constituting said submount is aluminum nitride, and the main constituent material of said base is copper-tungsten.

3. A semiconductor laser module having a semiconductor laser element, a submount bonded to this semiconductor laser element with a solder layer in-between and thereby mounted with it, and a base mounted with this submount with another solder layer in-between, wherein:

said submount comprises a laminated structure of at least two members,

a first member and a second member constituting said submount are bonded together by a solder layer

A,

said semiconductor laser element is bonded onto the top face of said submount by a solder layer B,

said base is bonded onto the bottom face of said submount by a solder layer C, and

the relationship among the melting points of said solder layers A, B and C is $\alpha_A > \alpha_B > \alpha_C$ where α_A , α_B and α_C are the respective melting points of the three solder layers.

4. A semiconductor laser module as claimed in Claim 3, wherein:

main constituent material of said semiconductor laser element is indium-phosphorus, main constituent material of said base is copper-tungsten, of the two members constituting said submount having a laminated structure, the first member positioned towards the semiconductor laser element is made of aluminum nitride, and the second member positioned towards the base is made of copper-tungsten.

5. A semiconductor laser module as claimed in Claim 3, wherein:

the main constituent material of said solder layer A is gold-germanium, that of said solder layer B is gold-tin, and that of said solder layer C is tin-lead.

6. A semiconductor laser module having a semiconductor laser element, a submount bonded to this semiconductor laser element with a solder layer in-

between and thereby mounted with it, and a base mounted with this submount with another solder layer in-between, wherein:

stress working in said semiconductor laser element is kept within a range of ± 20 MPa.